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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,759	12/14/2001	Frank Yen-Jer Shih	47600/JDC/A23	8164

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ART UNIT	PAPER NUMBER
1713	5

DATE MAILED: 04/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Offic Action Summary</b>	Applicati n No.	Applicant(s)
	10/017,759	SHIH ET AL.
	Examiner Satya B Sastri	Art Unit 1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Peri d for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 14 December 2001.
- 2a) This action is FINAL.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-20 and 49 is/are pending in the application.
- 4a) Of the above claim(s) 21-48 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-20 and 49 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

#### Pri rity under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment( )

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                         | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4 | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

1. This Office Action is in response to application filed on December 14, 2001. *Claims 1-48* are now pending.

### *Restrictions Requirement*

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:
- I. *Claims 1-20, 49*, drawn to composition, classified in class 526, subclass 323.2
  - II. *Claims 21-35*, drawn to a composition, classified in class 524, subclass various.
  - III. *Claims 36-48*, drawn to ink receptive construction, classified in class 427, subclass various.

### *Distinctness*

3. Inventions of Group II and Group I are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because any acrylic copolymer with at least one wet abrasion-resistance enhancing

monomer may be used. The subcombination has separate utility as wash primers and heat sealable adhesive compositions (US 5,744,540).

4. Inventions II and III are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case, the composition of Group II invention may be useful as heat sealable adhesive compositions (US 5,744,540).

5. The inventions of Group I are distinct from the inventions of Group III, because the inventions of Group III include the composition of Group II inventions for ink-receptive construction.

6. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, and/or have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

*Election of Species Requirement*

7. This application contains claims directed to the following genera of patentably distinct

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species of the claimed invention:

- a. soft acrylic monomer (Group I)
  - b. hard acrylic monomer (Group I)
  - c. mordant (Groups, I, II and III)
8. *Claims 1-20, 7-17, 21-48* are generic to a plurality of disclosed patentably distinct species comprising hard and soft monomers. Applicant is required under 35 U.S.C. 121 to elect a single disclosed species, even though this requirement is traversed.
9. Applicant is required that a reply to this must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.
10. Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

***Conclusion to Restriction/Election Requirement***

11. During a telephone conversation with Mr. John D. Carpenter on April 3, 2003, a provisional election was made with traverse to prosecute the invention of Group I, *claims 1-20, 49*, and a species of butyl acrylate as the soft monomer, methyl methacrylate as the hard monomer, poly(diallyldimethylammonium chloride) as the mordant. Affirmation of this election must be made by applicant in replying to this Office action. *Claims 21-48* are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

12. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

13. Applicant is reminded that if claims directed to the product are elected, and a product claim is subsequently found allowable, withdrawn process claims which depend from or otherwise include all the limitations of the allowable product claim will be rejoined. See M.P.E.P. § 821.04.

**Claim Rejections - 35 USC § 112**

14. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

15. *Claim 6* is rejected under 35 U.S.C. 112, second paragraph, as being indefinite because it is unclear as to what the reactive site of “styrene vinyl sulfonate” could be. In order to execute prosecution, the examiner has interpreted “styrene vinyl sulfonate” to mean “sodium styrene sulfonate”.

**Claim Rejections - 35 USC § 102**

16. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

17. *Claims 1-4, 18-20 and 49* are rejected under 35 U.S.C. 102(b) as anticipated by Baumstark et al. (US 5,744,540).

The disclosure of Baumstark et al. is in regard to an aqueous polymer emulsion comprising a copolymer of hard monomers, soft monomers, and nitrogen-containing adhesion-

promoting monomers (abstract). The main part of the monomer composition comprising hard and soft monomers accounts for **more than 50% by weight**, based on the monomer composition (column 5, lines 22-26). The monomers may be selected exclusively from the following monomers : **n-butyl acrylate**, 2-ethylhexyl acrylate, ethyl acrylate, **methyl methacrylate**, **n-butyl methacrylate**, **styrene**, acrylic acid, **methacrylic acid**, hydroxyl propylacrylate etc. (column 6, lines 55-64). Water soluble monomers such as acrylic and **methacrylic acid** may be present in an amount of from **0.1 to 5%**, by weight (column 5, lines 30-37). Crosslinking agents such as **alkylene glycol diacrylates and dimethacrylates** may be used in an amount of **0.01 to 5% by weight** (column 5, line 45-59). The disclosure further includes that the monomer compositions may include from **0.5 to 5%** by weight, of monomers which do not affect crosslinking until during film formation. Examples of monomers suitable for post crosslinking include hydroxyethyl and **hydroxypropyl acrylate** and methacrylate are also suitable for post crosslinking (column 6, lines 40-43). The monomer composition further includes as adhesion promoting monomers, monomers having at least one amino, ureido or N-heterocyclic group. Typical examples of polymerizable ureido monomers disclosed include **N-(3allyloxy2-hydroxypropyl)aminoethyleneethylurea**, **N-(methacrylamidoethyl)ethyleneurea** etc. (column 7, lines 15-55). The **ureido monomer** is polymerized in an amount from **0.1 to 10% by weight**, based on the total amount of monomers to be polymerized (column 19, lines 39-40). The various monomers may be copolymerized by free radical **emulsion polymerization** (abstract). Therefore, *claims 1-4, 18-20, 49* are anticipated by Baumstark et al.

*Claim Rejections - 35 USC § 103*

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

19. **Claims 5 and 6** are rejected under 35 U.S.C. 103(a) as being unpatentable over Baumstark et al (US 5,744,540) in view of Brown et al. (US 4,629,663).

The disclosure of Baumstark et al. is adequately set forth in paragraph 17 and is incorporated herein by reference.

The difference between the present invention and prior art is the presence a reactive surfactant based on styrene vinyl sulfonate in the compositions.

The disclosure of Brown et al. is in regard to an adhesive composition derived from alkyl acrylate monomer composition containing small amounts **sodium styrene sulfonate**. Use of such reactive emulsifiers is useful in producing a coagulum-free latex without the use of an external emulsifier (column 3, lines 16-27). In light of such benefits, it would have been obvious for one of ordinary skill in the art at the time the invention was made to include reactive emulsifier/surfactant in the monomer compositions of Baumstark et al. and thereby obtain the present invention.

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20. **Claims 7-17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Shih et al. (WO 99/04981) in view of Baumstark et al (US 5,744,540).

Coatable ink-receptive compositions as disclosed by Shih et al. include **pigments** and **mordants** dispersed in a binder composed of ethylene vinylacetate emulsion (abstract). Pigments useful in the compositions include **silica, silica gels, titanium dioxide, magnesium carbonate, clays, zeolites** etc. Presence of such pigments increases the opacity and/or modifies the porosity of the coated substrate (page 6, lines 33-39). Additionally, **compositions may include cationic polymers such as polymerized diallyldimethylammonium compound and a copolymer of dimethylaminoethylacrylate or methacrylate and at least one hydroxy-lower organic acrylate**, with hydroxyethylacrylate and hydroxyethylmethacrylate as the preferred monomers. Examples of counterions include halides such as a **chloride** and **methylsulfate anion** (page 3, lines 23-24). The cationic polymer fixes acid dye colorants in water-based inks, and diminishes dye diffusion.

The difference between the present invention and Shih et al. is the use of an acrylic copolymer as a binder copolymer in the coatable ink-receptive compositions

The disclosure of Baumstark et al. is adequately set forth in paragraph 17 and is incorporated herein by reference. The novel aqueous polymer emulsions of Baumstark et al. are typically used in the area of aqueous coating materials, where the film formed from the aqueous polymer emulsion adhesively bonds to the substrate (column 11, lines 54-59). The disclosure further includes that the acrylic copolymers derived from hard acrylic monomers, soft acrylic monomers, functional monomers, and adhesion-promoting monomers yield films with improved gloss and a elongation at break as compared to many prior art films, without there being any

significant reduction in the wet adhesion (column 3, lines 51-56). In light of such benefits, it would have been obvious for one of ordinary skill in the art at the time the invention was made to include the acrylic copolymer of Baumstark et al. in the ink-receptive compositions of Shih et al. and thereby obtain the present invention (*claims 7-17*).

### Conclusion

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Satya Sastri at (703) 305-8490.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached at (703) 308-2450.

Any inquiry of a general nature or relating to the status of this application should be directed to the group receptionist at (703) 308-2351.

SATYA SASTRI

April 10, 2003



D.R. WILSON  
PRIMARY EXAMINER